

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A wear resistant member, comprising:

a ball member consisting essentially of a silicon nitride sintered body;

wherein the silicon nitride sintered body comprises from 75 to 97% by mass of silicon nitride, from 0.2 to 5% by mass of particles of titanium nitride and from 2 to 20% by mass of a grain boundary phase comprising a Si-R-Al-O-N compound, where R is a rare earth element;

wherein the particles of titanium nitride have a long axis of 0.04 μm or more and 1 μm or less, and at least 80% by volume of the particles of titanium nitride have an aspect ratio in the range of from 1.0 to 1.2,

wherein the ball member has a rolling fatigue life of 400 hr or more when tested with a thrust bearing testing machine, under the conditions of opponent material of a SUJ2 steel plane table provided by JIS G4805, a maximum contact stress of 5.9 GPa, a ball, and a number of rotation of 1200 rpm, and the rolling fatigue life is measured until a surface of the ball member is peeled off.

Claim 2 (Previously Presented): The wear resistant member as set forth in claim 1:

wherein the particles of titanium nitride are dispersed in the silicon nitride sintered body as single particles.

Claim 3 (Original): The wear resistant member as set forth in claim 1:

wherein the titanium nitride is not dissolved in the silicon nitride and the grain boundary phase as a solid solution.

Claim 4 (Previously Presented): The wear resistant member as set forth in claim 1:

wherein the particles of titanium nitride are dispersed in the grain boundary phase.

Claims 5-6 (Cancelled).

Claim 7 (Original): The wear resistant member as set forth in claim 1:

wherein the particles of titanium nitride each have a roundish shape.

Claim 8 (Previously Presented): The wear resistant member as set forth in claim 1:

wherein the silicon nitride sintered body has a porosity of 0.5% or less and a maximum pore diameter of 2 μm or less.

Claims 9-11 (Cancelled).

Claim 12 (Currently Amended): The wear resistant member as set forth in claim

[[11]] 1:

wherein the ball member has a crushing strength of 200MPa or more and a fracture toughness of 6.5 $\text{MPa}\cdot\text{m}^{1/2}$ or more.

Claim 13 (Cancelled).

Claim 14 (Previously Presented): The wear resistant member as set forth in claim 1:

wherein the grain boundary phase comprises from 0.5 to 10% by mass of a rare earth element in terms of oxide, from 0.1 to 5% by mass of aluminum oxide and 5% by mass or less of aluminum nitride.

Claim 15 (Previously Presented): The wear resistant member as set forth in claim 1:

wherein the silicon nitride sintered body further comprises at least one element selected from the group consisting of magnesium, zirconium, hafnium and tungsten in the range of from 0.1 to 5% by mass in terms of oxide.

Claim 16 (Original): The wear resistant member as set forth in claim 1:

wherein the wear resistant member is rolling bearing member.

Claim 17 (Withdrawn): A method of manufacturing the wear resistant member of claim 1, comprising the steps of:

mixing silicon nitride powder comprising 1.7% by mass or less of oxygen and 90% by mass or more of α -silicon nitride having an average particle diameter of 1.0 μm or less,

from 0.5 to 10% by mass of a rare earth compound in terms of oxide, from 0.1 to 5% by mass of titanium nitride having an average particle diameter of 0.7 μm or less or a titanium compound that forms titanium nitride by sintering in terms of titanium nitride, from 0.1 to 5% by mass of aluminum oxide and 5% by mass or less of aluminum nitride, thereby providing mixture of raw materials;

molding the mixture of raw materials into a desired shape;

heat treating, after degreasing the molded body obtained after said molding, at a temperature in the range of from 1300 to 1450°C; and

sintering the heat-treated molded body at a temperature in the range of from 1600 to 1900°C.

Claim 18 (Withdrawn): The method of manufacturing a wear resistant member as set forth in claim 17:

wherein the mixture of raw materials is added in a plurality of portions to the silicon nitride powder, the titanium nitride or the titanium compound that forms titanium nitride due to the sintering.

Claim 19 (Withdrawn): The method of manufacturing a wear resistant member as set forth in claim 17:

wherein the mixture of raw materials contains titanium oxide powder having an average particle diameter of 0.5 μm or less in the range of from 0.1 to 5% by mass in terms of titanium nitride.

Claim 20 (Withdrawn): The method of manufacturing a wear resistant member as set forth in claim 17, further comprising a step of:

carrying out a HIP treatment under a pressure of 300 atm or more in a non-oxidizing atmosphere at a temperature in the range of from 1600 to 1850°C.

DISCUSSION OF THE AMENDMENT

Claim 1 has been amended by, in effect, incorporating the subject matter of Claims 11 and 13 therein; Claims 9-11 and 13 have been canceled. Claim 10 has been amended to refer to the silicon nitride sintered body. Claim 12 has been amended to depend on Claim 1.

No new matter has been added by the above amendment. Claims 1-4, 7, 8, 12 and 14-16 are now active in the application. Claims 17-20 stand withdrawn from consideration.